



INDEXA

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Winter 2016

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Special Issue

A 501(c)(3) non-profit organization for the enhancement of amateur radio, worldwide peace, and friendship

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Upon return from the K9W Wake Island, the Forgotten 98 Commemoration of 2013, I began targeting another Top Ten Most Wanted Pacific Island--Palmyra. This DXCC had not been activated since 2005 placing it in at #9 worldwide and #2 in Europe.

This tiny 4.6 square mile atoll,

Palmyra 2016 — K5P

By Lou Dietrich, N2TU



The Palmyra Team: Tom (ND2T), Hal (W8HC), Glenn (W0GJ), Dick (W3OA), Lou (N2TU, co-leader), John (K6MM), Craig (K9CT, co-leader), Jerry (WB9Z), and Mike (K9NW).

located approximately 1000 miles south of Hawaii, is made up of a number of sand and rock-reef islets covered to the shoreline with lush vegetation. (See left) It lies just 5 degrees north of the equator. The largest island in the atoll is Cooper Island, which is the location for the 2000 yard runway.

Palmyra was used by the US Navy during WWII as a southern defense position for Hawaii. During the war, the atoll was occupied by over 2500 servicemen and civilians. These personnel transformed Palmyra from a lush atoll into a working military base with three airfields, barracks, harbor, power plant and military stockpile warehouses. The at-

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oll's vegetation was bulldozed, paved over and developed to the requirements of a Naval Base.

Following the war, the Naval Air Station was demolished; materials were burned, then dumped into the lagoon or left in place. During our visit, many of these elements were still visible and one is currently used for a tsunami emergency shelter. Following the war, the Fullard-Leo family sued for a return of ownership and was awarded ownership of the atoll. This family had acquired the atoll in 1922 and established a coconut plantation until the Navy took possession in 1941.

In December 2000, The Nature Conservancy bought most of the atoll from the Fullard-Leo family and established a research station on Cooper Island. The remaining portions of Palmyra are under the jurisdiction of the U.S. Fish and Wildlife Service. The Nature Conservancy and US Fish and Wildlife jointly supervise the atoll and have established strict bio-security protocols for visiting scientists, environmentalists and, yes, Amateur Radio operators.

Negotiations and Award

Starting late 2013, we began a dialogue with USFWS by issuing our first application for a Special Use Permit (SUP), which was promptly rejected. Phone conversations revealed portions of Palmyra, exclusively controlled by USFWS, simply were either environmentally sensitive or had vegetation growing right up to the shoreline. (see photo, Page 1) In short, there wasn't a viable place to establish an operation. Undaunted, and maybe a bit naive, I continued escalating our SUP application through the various levels of USFWS.

This took many months and the frustration level grew. Finally in August of 2014, I received a phone call from a high level USFWS official. He reiterated the reasons for the SUP rejection but left open the possibility of obtaining permission from The Nature Conservancy to operate from their portion of the atoll, Cooper Island. He offered to assist and I graciously accepted. As noted before, Cooper has a research center and a landing strip!

Finally some good news!

Following this, we authored a large document and forwarded it to The Nature Conservancy. This detailed who we were, what we do, why we do it, propagation studies, a bio-security plan (modeled after the USFWS's protocols), our financial status and possible operating locations on Cooper. As a follow-up, there were multiple phone conversations to clarify the details.

On October 14th, 2014, we received an application from TNC which was issued to any Amateur Radio operator who may have expressed an interest in operating from Palmyra. In effect, the entire amateur radio community could respond. Somewhat chagrined that we found we were to be in competition with the amateur community at large, we re-issued our Palmyra Application document and again followed up with multiple telephone calls.

The final decision rested in TNC's hands. Their decision date was 30 January 2015. It was a long 3 months to wait!

Finally we heard the news!

Sitting in Jamaica, waiting to go to K1N Navassa, we were informed the Pacific Islands DXpedition

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The **INDEXA Newsletter** is a quarterly publication of the International DX Association. INDEXA is a 501(c)(3) non-profit organization.
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Group had been awarded the opportunity!

We were allowed to have 12 operators on the island early in January 2016, and were required to produce a non-refundable deposit (\$60,000) within 30 days of the award. To add more complication, the aircraft cargo capacity was limited and the only barge shipment to the atoll was due to leave Hawaii April 1, 2015.

Logistics

The “normal” weight for a DXpedition to the Pacific is 1600 to 1800 pounds, which greatly exceeded the charter aircraft allowance. The cargo, therefore, had to be split into two components, barge and aircraft.

The logistics to make this happen were daunting! The Steppir antennas, coax, tools, connectors, rope, wire, baluns, bandpass filters, Vibroplex keys, Spiderpoles, Battle Creek Special, all had to make the barge shipment. The radios, laptops and amps could go later with the aircraft but everything else had to be in Hawaii in the last week of March.

While we were still on Navassa, the ball got rolling. Our massive shopping list was being sourced by stateside hams.

Due to bio-security concerns, all equipment had to be repacked due to the prohibition of cardboard and untreated wood on the atoll. Our Team bought plastic containers, hard sided ski carriers and “bazuka” shipping tubes and stripped all packing materials from the equipment. Again, this added complexity to the logistics and short-fused timing.

How all this was accomplished is nothing short of a miracle. Many, many were involved and if I mention someone, I am sure I will miss someone. The Sponsors were unbelievably supportive. Everyone replied, “No problem”. The logistical support crew had a “get it done” attitude. Thank you! Thank you, all!

To summarize, we were awarded the time slot on January 31st and our material was sitting at the dock in Hawaii seven weeks later. Truly amazing!

Once the heavy material was safely on its way to the atoll via the vessel Kahana, the Team could catch a breath for a few months as Janet and Joe Pater canvassed the globe for Foundation, Club and individual financial support. Due to concurrent Top Ten DXpeditions, financial support was strained but the amateur ranks were most generous. Funds from INDEXA and major foundations were made available and allowed the Team to navigate the early financial and procurement stages of the DXpedition. Without this early funding, Palmyra 2016 would have been in an extremely difficult financial situation.

Team and Logistical Problems

As announced in our press release, our Team consisted of 12 experienced DXers. What a fantastic Team we were blessed with! Everyone had significant DXpeditioning experience and most everyone was ‘tri-lingual’—adept at RTTY, CW and SSB modes. After waiting for most of 2015, we were all primed and ready.

This was, however, was not to be the case. During the many discussions with TNC, we learned they were in negotiations with a new aircraft charter service. These negotiations took longer than expected and our Team was informed in mid-November 2015 that we needed to slim down to 9 members. Apparently, the aircraft, a Falcon 50, was smaller than the previous Gulfstream and could only accommodate 9 passengers. For the Team Leaders, Craig K9CT and me, this was a gut wrenching time. How could we tell three Team members, avid participants in the early preparations, they could not go?

We explored a number of options including chartering a second flight or a hiring a vessel from Hawaii. Neither of these proved economically or practically viable. The second flight was extremely expensive; the vessel from Hawaii was expensive and would have added two weeks additional onto the trip.

We had no choice but to ask for ‘volunteers’. In the true spirit of DXing, camaraderie and support of the operation, three members volunteered to stay home. This was truly disappointing to the entire Team; we

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consider each of them as Team members and their expertise and good nature was sorely missed.



Say what? How much room is in that plane? Brenda Santos, TNC Coordinator, Craig (K9CT), and Lou (N2TU) ponder volume calculations.

Finally the day arrived! The Team assembled in Hawaii on January 9, 2016 and delivered the rigs and amps to the aircraft on the 10th. Our TNC contact was quite surprised at the size of the rig and amps in their Pelican cases. Our logistics plan measured each parcel and we knew the rigs and amps were just under 1.5 cu.yds. As part of the logistics plan, we were to be allowed 3 cubic yards of cargo (rigs and amps) and personal luggage. Our delivered cargo was well under the stated 3 cu. yd. allowance. The rigs and amps made it into the cargo hold, no problem.

When the Team arrived on the 11th, it was obvious our personal luggage would not fit! What happened to the 3 cu.yd. allowance?

Following an orientation from the USFWS representative, we began boarding the plane. Each Team member unloaded their luggage, moved their contents to briefcase sized plastic bags, which were either stuffed into spaces in the cargo hold or carried onto the aircraft and held on our laps. The plane was truly loaded with every available space taken.

We looked like refugees! But everyone was smiling and in good spirit!



With cargo and personal item storage issues resolved, we were ready to go!

We were off to Palmyra!

On our way to Palmyra, Tom ND2T asked the pilot to fly over Kingman Reef which is only 35 miles from Palmyra. During our descent, we were afforded the opportunity to see the reef from 10,000 feet. It looked extremely small and fragile. (See below.)



Upon arrival at Palmyra, we were greeted by the TNC staff who assigned us lodging facilities, assigned Team members to camp chores, gave us Pal-

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myra specific orientation and made us feel welcomed. The six TNC staff on Palmyra are fantastic hosts. They went out of their way to make our stay with them the best it could be. They were also a bit curious about why Amateur Radio operators were so dedicated that they worked 24 by 7 and took precious little time off for exploring their island paradise. Why would we travel all this way, spend so much, and pack all this gear just to make 5 second contacts with the rest of the world when an island paradise awaited them!

Finally on the air!

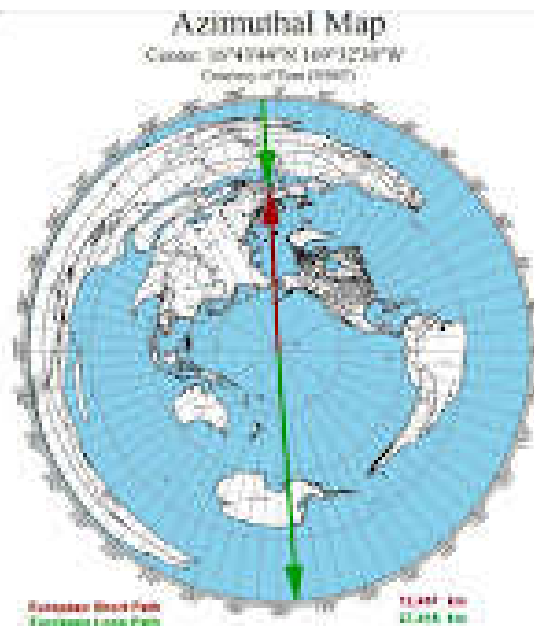
As part of the award, our operation was confined to a rather small footprint. Due to the thick vegetation, we decided to use the “ripple wharf” which was directly behind the room called the dry lab. Our antennas had to be wedged into this rather small piece of land. This presented a number of problems.



The small patch of land on the water front was the sum total of area in which to install antennas.

Three SteppIr verticals were used on 80 to 10 meters. We converted a BCS (Battle Creek Special) antenna to 160m only as an inverted L, and created a 80m vertical from a Spiderbeam pole. A SAL30 was setup for RX on 160m and 80m. It was most effective on 160m due to QRN from solar battery inverters.

A dedicated SVDA was pointed to EU. Prior to leaving the States, our Team studied the propagation data produced by Stu, K6TU. We were aware EU would be the most difficult, with paths over both poles. This data proved incredibly accurate. See below.



Europe—straight through the polar regions, SP or LP!

Because of this, we set up the SVDA and used the SPE 1.3 amplifier. During the first week of operation, very few EUs made the log, mostly due to poor solar numbers and extremely short interval openings. The Team was aware of the timing of these openings, however propagation just wasn't there.

Propagation improved during the second week and the EU's making the logs greatly increased. EU QSOs equated to over 11% of the total K5P QSOs.

We used 5 Elecraft K line setups. Due to proximity of antennas in the small “farm”, it was not possible to simultaneously operate two radios on the same band. So, we had to choose the mode which produced the most QSOs. Our scheduled rotation was three teams of three members, thus we tried to op-

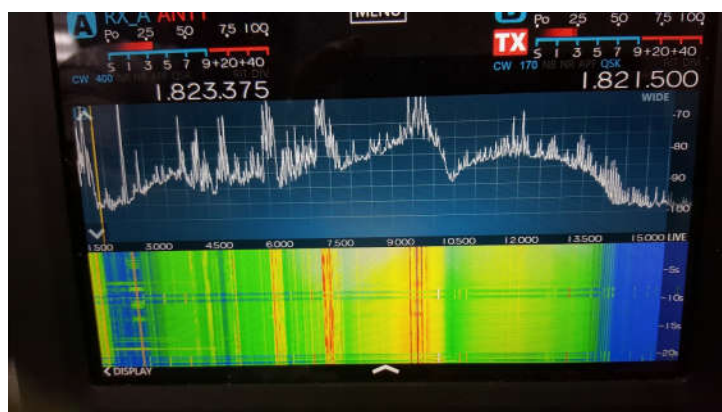
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erate three radios on different bands. This also proved to be problematic! Even with excellent bandpass filters, operating 160M would interfere with 80M or 80M would interfere with 40M, etc. This was due to second harmonics and the small antenna farm footprint.

If you have never heard the radar interference in the Pacific (called The Dragon), take a look at the spectrum scope below. This interference is loud and wideband. It ranged from 1.5mhz to over 14mhz. When it popped up at odd intervals, all QSOs stopped!



When the “Dragon” breathes his fire, all communications cease.

A fourth radio was available for anyone who wanted more operating time. This radio had to be wedged into a band slot which didn't interfere with the three active stations. The fifth radio was set up to be a beacon on 6m. In almost two weeks of operation, this 500 watt beacon was never spotted from any portion of the globe.

Off hours

The DXpedition shift rotation was very grueling. Sleep rarely was at the same time every day and that throws biorhythms off kilter! You eat when you can, you operate, you sleep, you wander, you do your email (yes, we had internet), you operate, then you do it all over again! For two full weeks. At the

end of the two weeks, you look into your teammates' eyes and there is that far away, dreary-eyed look!

Also, there was antenna maintenance. Salt air and aluminum aren't a good combination and the BCS had to be erected and re-erected so many times I finally lost count!

On Palmyra, we had a few diversions to help morale. Many of the Team went snorkeling with the TNC crew watching over us like mother hens. What a fantastic treat! Fabulous coral formations and too many fish to categorize in a lifetime! (See below.)



When not dogged tired, many of our number were able to take advantage of guidance from TNC personnel to wonder at the splendor of life on the reef.

Some took bikes rides along the runway. Others toured Cooper and Thatch islands, which were the only two we had permission to visit. Thursday nights, the TNC crew had movie night in the Mess Hall but due to our shifts, few of us attended.

Most of the time, we congregated in the dry lab operating room making sure everything was working, uploaded logs to Clublog, and busied ourselves keeping track of openings and rates. (See next page.)

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Full crew hard at work in the Dry Lab operating room.

Wrap up and Thanks!

Palmyra 2016 ceased operation on January 26 and the entire Team began the process of packing our equipment. As with the initial shipment, we could take the rigs and amps but everything else had to go back to Hawaii via vessel. Once packed, we settled into island life, lounging and awaited our plane ride home. During our operation, we netted over 75,000 QSOs in over 150 entities. North America and Japan dominated the QSO count. Team dedication to the EU openings raised the EU percentage to 11.4%

Our Team needs to thank our global Pilots. They had an extremely rough first week and stuck with us through poor solar numbers and tough propagation. Their input was invaluable to our DXpedition and we appreciate their dedication!

Our logistical support on Hawaii was handled by Kimo KH7U, who is a one man freight consolidator and forwarder. All, repeat, all of our equipment—however it arrived in Hawaii was received by Kimo and delivered to either the plane or the barge. That is over 1800 pounds of equipment, received at different times, consolidated and subsequently delivered. Additionally on the way back, he again handled everything, re-homing it to equipment sponsors, suppliers and Team members. Kimo was key to our success! We sincerely thank him.

Don N1DG, added his worldwide shipping expertise and greatly facilitated shipments out of the mainland and again on the return.

Janet and Joe Pater were our financial canvassers! They sent letters to the major Foundations, countless clubs and individuals. This was an extremely tough assignment due to the quantity of concurrent DXpeditions draining treasuries of potential supporters. Through sheer effort, Joe and Janet managed to get K5P on a sound financial footing just in time to meet our commitments.

Thanks to Elecraft, SteppIr, Expert Linear Amps, America amplifiers, DX Engineering, Gigaparts, Vibroplex, Array Solutions, Arlan Communications, Force 12, CQ Magazine (Japan), Primus, UX5UO QSLs, CQ maps and The RF Connection. When asked to support this DXpedition, their response was universal. "What do you need, how many and when"! The Ham Spirit is alive and well with these fine, gracious vendors. They went out of their way to get you in the log. Now let's support them!

The Global Foundations were wonderful with their universal support. As mentioned previously, treasuries were strained with the weight of concurrent, enormously expensive DXpeditions. Their support was tremendous and greatly appreciated.

INDEXA's support is and has always been fantastic. As with all DXpeditions, the expenses are front end loaded. In our case, there needed to be a huge payment upfront to secure our slot on Palmyra. INDEXA immediately came to our financial aid when they found out about the huge upfront payments. This greatly relieved the pressure on the Team as we scampered to pull Palmyra together, logistically and financially. Thanks to INDEXA for, once again, its unwavering support.

Until next time. . . .

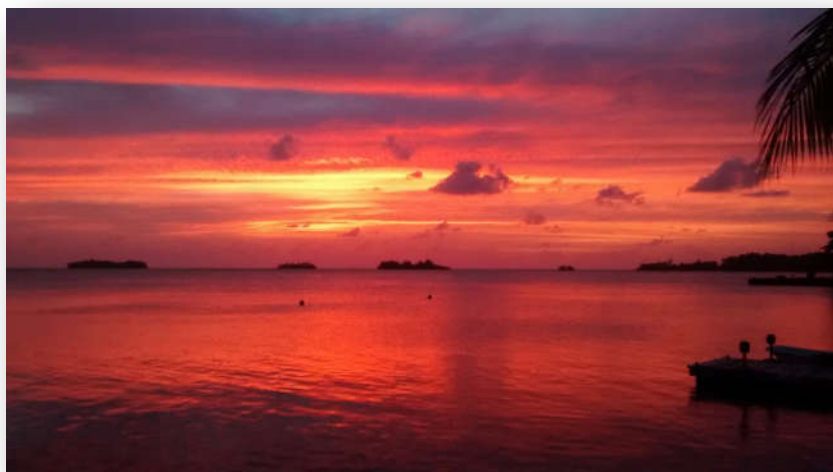
-73 *Lou*, N2TU

Enjoy some additional scenes of our days on Palmyra on the next page.

Scenes from Palmyra 2016



Above, Jerry (WB9Z) rearranges his luggage for the flight to Palmyra. Right, Dick (W3OA) musters a tired smile while serving the thousands of callers.



If a DXpeditioner is lucky enough to go to bed at a “normal” bedtime, he is usually too bleary-eyed to enjoy sunsets like this.



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PO Box DX; Leicester, NC 28748
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